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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|------------------------|-------------------------|------------------|
| 10/039,063 | 12/31/2001 | Pradeep K. Subrahamyan | STL10377/40046.179USU1 | 9119 |
| 7590 | 02/22/2006 | | | |
| Fellers, Snider, Blankenship, Bailey & Tippens Bank One Tower 100 North Broadway Suite 1700 Oklahoma City, OK 73102-8820 | | | EXAMINER | TZENG, FRED |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2651 | |
| | | | DATE MAILED: 02/22/2006 | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|------------------------------|------------------------|----------------------|--|
| | 10/039,063 | SUBRAHAMANYAN ET AL. | |
| Examiner | Art Unit | | |
| Fred Tzeng | 2651 | | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 06 December 2005.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-3,5-9,11,17,19 and 25-32 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 1-3,5-9,11,17,19 and 25-28 is/are allowed.

6) Claim(s) 29-32 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 31 December 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____

DETAILED ACTION

1. This office action is in responsive to the amendment filed on December 06, 2005. Claims 1-3, 5-9, 11, 17, 19 and 25-32 are currently pending with claims 1-3, 5-9, 11, 17, 19 being amended and claims 25-32 being added newly.
2. The claim objections to claims 5, 16-19 is withdrawn due to the amendment filed on December 06, 2005.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al (USPN 6,683,744), hereafter as Takano, in view of Subrahmanyam (US 2002/0054458A1).

RE claim 29, Takano discloses the invention substantially as claimed. Takano discloses a spin-stand comprising a rotary actuator arm which supports a transducer head adjacent a data storage medium (see figure 8 and column 10 lines 7-26; i.e., the spin-stand 31 comprising a rotary actuator arm 104 which supports a transducer head 102 adjacent a data storage medium 1).

However, Takano does not specifically teach a Halbach array voice coil motor configured to move the actuator arm with respect to the medium.

Subrahmanyam teaches that a Halbach array voice motor 500 (see section 0040 lines 22-31) is configured to move the actuator arm 123 with respect to the medium 134 (see figure 3 and section 0036 lines 1-9, 17-25) for elimination in the translation mode of excitation, such that the actuator assembly is capable of faster seek times and improved bandwidth capability on read and write operations (see section 0011 lines 16-23).

Takano and Subrahmanyam are combinable because they are from the same field of endeavor. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Takano by including the Halbach array VCM 500 for a disk drive from Subrahmanyam in order to eliminate the translation mode of excitation, such that the actuator assembly is capable of faster seek times and improved bandwidth capability on read and write operations as expressly stated in section 0011 lines 16-23 of Subrahmanyam.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al (USPN 6,683,744), hereafter as Takano, in view of Subrahmanyam (US

2002/0054458A1), and further in view of Guzik et al (USPN 6,094,047), hereafter as Guzik.

RE claim 30, Takano in view of Subrahmanyam disclose the invention substantially as claimed.

However, neither Takano nor Subrahmanyam teaches an encoder which determines an angular position of the actuator arm.

Guzik teaches using encoder 58 to generate an index pulse 69 which corresponds to one particular angular position of the spindle 22 with respect to the spindle housing 20 (see column 3 lines 45-60).

Takano, Subrahmanyam and Guzik are combinable because they are from the same field of endeavor. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Takano and Subrahmanyam in view of Guzik by including the encoder 58 for determining an angular position of the spindle 22 from Guzik in order to balance the spinstand so as to reduce vibration caused by an imbalance thereof as expressly stated at column 1 lines 6-11 and column 2 lines 25-36 of Guzik.

RE claim 31, Takano in view of the rationale above discloses a control circuit which selectively applies control current to the motor to position the transducer head adjacent the medium in relation to the determined angular position and servo data transduced by the head from the medium (see column 1 lines 39-50; i.e., the compensator 9 functioned as the control circuit).

RE claim 32, Takano in view of the rationale above discloses that the control circuit further generates a position error signal adjustment parameter in relation to the determined angular position and the transduced servo data to define a substantially circular track on the medium (see column 1 lines 39-50; i.e., the compensator 9 functioned as the control circuit).

Allowable Subject Matter

7. Claims 1-3, 5-9, 11, 17, 19, 25-28 are allowed.
8. The following is a statement of reasons for the indication of allowable subject matter:

Claims 1-3, 5-9 are allowable over the prior art of record because none of the prior art of record teaches or fairly suggests a control circuit in a spinstand which translates the angular position from an encoder to a radial position of a head with respect to a medium.

Claims 11, 17, 19, 25-28 are allowable over the prior art of record because none of the prior art of record teaches or fairly suggests a method of bypassing adjustment of control current to a motor coupled to the actuator arm in accordance with the transduced servo data if the servo data are not consistent with the detected angular position of the actuator arm.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication from the examiner should be directed to Fred Tzeng whose telephone number is 571-272-7565. The examiner can normally be reached on weekdays from 9:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on 571-272-7579. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and 571-273-7565 for After Final communications.

11. Informal regarding the status of an application may be obtained from the Patent Application Information Retrieval (**PAIR**) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Fred F. Tzeng

February 17, 2006